

## **A Study To Evaluate The Effectiveness Of Progressive Muscle Relaxation Exercise On Anxiety, Depression And Quality Of Life Among Pulmonary Arterial Hypertensive Patients In Selected Hospitals Of Ludhiana/Moga, Punjab**

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### **Abstract :**

**Background:** Pulmonary hypertension is a type of high blood pressure that affects the arteries in the lungs and the right side of the heart. In one form of pulmonary hypertension, called pulmonary arterial hypertension (PAH), blood vessels in the lungs are narrowed, blocked or destroyed.

### **Objective:**

1. To assess the pre-test and post- test level of anxiety among pulmonary arterial hypertensive patients.
2. To assess the pre-test and post- test level of depression among pulmonary arterial hypertensive patients.
3. To assess the pre-test and post- test level of Quality of life among pulmonary arterial hypertensive patients.
4. To evaluate the effectiveness of Progressive muscle relaxation exercise on anxiety, depression and quality of life among pulmonary arterial hypertensive patients.
5. To compare the pre-test and post- test level of anxiety versus depression among pulmonary arterial hypertensive patients.
6. To compare the pre-test and post- test level of depression versus quality of life among pulmonary arterial hypertensive patients.
7. To compare the pre-test and post- test level of quality of life versus anxiety among pulmonary arterial hypertensive patients.
8. To find out the association between the Progressive muscle relaxation Exercise on anxiety among pulmonary arterial hypertensive patients with their selected socio-demographic variables.
9. To find out the association between the Progressive muscle relaxation Exercise on depression among pulmonary arterial hypertensive patients with their selected socio-demographic variables.
10. To find out the association between the Progressive muscle relaxation Exercise on quality of life among pulmonary arterial hypertensive patients with their selected socio-demographic variables.

**Methods:** The study design was Quasi experimental pre test post test control group design. Total of 20 pulmonary arterial hypertensive patients, 10 in Progressive Muscle Relaxation Exercise and 10 in control group were included. Anxiety, Depression and Quality of life was assessed using Beck Anxiety Inventory, Beck Depression Inventory II and WHO Bref Quality of life scale after 4 weeks. The Pulmonary Arterial Hypertensive patients in intervention group received four sessions within 4 weeks while Pulmonary Arterial Hypertensive patients in control group received treatment as usual.

**Results:** There was significant decrease in pre and post intervention mean anxiety, depression scores and increase in pre and post intervention mean Quality of life scores ( $p < 0.01$ ) of Pulmonary Arterial Hypertensive patients in intervention group, while significant increase ( $p < 0.01$ ) in mean anxiety and

depression scores ( $p < 0.01$ ) of Pulmonary Arterial Hypertensive patients and decrease in mean Quality of life scores ( $p < 0.01$ ) in control group.

**Conclusion:** Progressive Muscle Relaxation Exercise was effective in reducing anxiety, depression and improved Quality of life in pulmonary arterial hypertensive patients.

**Key words:** Progressive Muscle Relaxation Exercise, Anxiety, Depression and Quality of life, Pulmonary Arterial Hypertensive patients.

## Introduction

The word health refers to a state of complete emotional and physical well being. Health care exists to help people maintain this optimal state of health. Health, according to the World Health Organization, is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Pulmonary hypertension is a type of high blood pressure that affects the arteries in the lungs and the right side of the heart. In one form of pulmonary hypertension, called pulmonary arterial hypertension (PAH), blood vessels in the lungs are narrowed, blocked or destroyed. The damage slows blood flow through the lungs, and blood pressure in the lung arteries rises. The heart must work harder to pump blood through the lungs. The extra effort eventually causes the heart muscle to become weak and fail.

Progressive Muscle Relaxation (PMR) is an effective technique for reducing overall body tension as well as psychological stress. This simple technique involves the tensing and relaxing of all of the major muscles in your body in order from your head to your feet. By tensing your muscles before relaxing them, you enable yourself to relax them more thoroughly after you release, letting go of physical tension more effectively. Fortunately, it can be easily learned and practiced virtually anywhere. Research shows that relaxing your body physically can also release psychological tension and stress, minimizing your stress reactivity and decreasing your experience of chronic stress. There are other effective ways to minimize psychological and emotional stress, but PMR can offer you one more tool to manage stress, which can help you to build your resilience overall.

## Research Methodology

### Research Design

A Quasi experimental (Pre test-post test control group design) research design was selected to accomplish the stated objectives for the present study.

### Research approach

Quantitative research approach was considered to be appropriate for present study .

### Area of study

The study was conducted on Moga medicity Super-speciality hospital and Deepak Heart Centre.

### Sample and Sample size

Total sample for the study was 20 Pulmonary arterial hypertension patients of Deepak heart centre and moga Medicity Super-speciality hospital, Moga, Punjab.

### Sampling Techniques

Convenient sampling technique will be used to select the samples for the study.

### Tools

#### Development and description of the tool

**The tool used in the study has following two parts:-**

#### Part I: Socio Demographic Characteristics

This part consists of ten items for obtaining personal information i.e. Age, Gender, Religion, Education level, Occupation status, Nature of work, Monthly Income, Type of family, Place of residence, Dietary habits

#### Part 2: Standardized Scale

**Beck Anxiety Inventory (BAI).** The scale was developed by Dr. Aaron T. Beck and Robert A. Steer in 1990, 1993. The Beck Anxiety Inventory is a 21 item scale that measures the severity of self reported anxiety in adults and adolescents. Each symptom is rated on a 4-point scale ranging from 0 to 3.

**Beck Depression Inventory-II (B.D.I-II).** The BDI was developed in 1996 by Dr. Aaron T. Beck. The tool (BDI) measures the intensity, severity, and depth of depression in patients. BDI is composed of 21 questions or items, each with four possible responses. Each response is assigned a score ranging from 0-3, indicating the severity of the symptom.

### Content validity of the tools

Content validity of the tools was determined by expert's opinion.

### Pilot study

Pilot study was conducted in the 3rd week of

February 2022. 20 Pulmonary Arterial Hypertensive patients were taken as the sample for the pilot study. 10 Pulmonary Arterial Hypertensive patients in PMR group and 10 in Control group. Pilot study was done to ensure the reliability of the tool and feasibility of the study. Prior permission was taken to conduct the study from Cardiologist and medical superintendent. With the help of standardized tool the investigator collected data from Pulmonary Arterial Hypertensive patients after obtaining verbal consent. The time taken for data collection was 30 to 40 minutes.

### Analysis and Conclusion

Comparison of Pre and post intervention with selected variables among pulmonary arterial hypertensive patients in intervention group 1(PMR)

**N=10**

Variables	Mean Scores (PMR group)		df	t
	(Mean± SD)			
	Pre intervention	post intervention		
Anxiety (BAI)	29.90±9.17	17.50±7.07	9	9.17**
Depression (BDI .II)	24.30±14.15	12.30±6.57	9	4.82**
Quality of Life	36.50±18.42	70.00±13.74	9	8.80**

Table 1, depicts Pre and Post intervention comparison of selected variables among pulmonary arterial hypertensive patients in Group 1 P.M.R intervention, mean anxiety scores among pulmonary arterial hypertensive patients were 29.90±9.17 while 17.50±7.07 after 4 weeks(post intervention).paired t test was applied to compare the means. It was found to be statistically significant at p<0.01 level. Pre-intervention, mean depression score among pulmonary arterial hypertensive patients were

24.30±14.15 while 12.30±6.57 after 4 weeks (post intervention).paired t test was applied to compare the means. It was found to be statistically significant at p<0.01 level. Pre-intervention, mean Quality of life score among pulmonary arterial hypertensive patients were 36.50±18.42 while 70.00±13.74 after 4 weeks (post intervention).paired t test was applied to compare the means. It was found to be statistically significant at p<0.01 level. So the researcher is failed to accept the null hypothesis i.e There will be no significant difference in reduction of anxiety, depression and improved quality of life

among pulmonary arterial hypertensive patients who exposed to PMR.

**N=10**

Comparison of Pre and Post Assessment with selected variables among pulmonary arterial hypertensive patients in Group 2(Control Group)

Comparison	Mean Scores (PMR group)		df	t
	(Mean± SD)			
	Pre Assessment	Post Assessment		
Anxiety (BAI)	38.10 ± 10.34	51.30 ±7.83	9	8.95**
Depression (BDI .II)	38.20 ±15.73	49.60 ±13.23	9	7.38**
Quality of Life	37.50± 21.25	28.50± 22.24	9	6.19**

\*\*Significant at 0.01 level

Table 2 depicts, pre and post assessment comparison of selected variables among pulmonary arterial hypertensive patients in control group 2. Pre-Assessment, mean anxiety scores among pulmonary arterial hypertensive patients were  $38.10 \pm 10.34$  while  $51.30 \pm 7.83$  after 4 weeks (post assessment). Paired t test was applied to compare the means. It was found to be statistically significant at 0.01 level. Pre-Assessment, mean depression scores among pulmonary arterial hypertensive patients were  $38.20 \pm 15.7$  while  $49.60 \pm 13.2$  after 4 weeks (post assessment). Paired t test was applied to compare the means. It was found to be statistically significant at 0.01 level. Pre-Assessment, mean Quality of life scores among pulmonary arterial hypertensive patients were  $37.50 \pm 21.2$  while  $28.50 \pm 22.24$  after 4 weeks (post assessment). Paired t test was applied to compare the means. It was found to be statistically significant at 0.01 level.

### Conclusion

Progressive Muscle Relaxation Exercise was effective in reducing Anxiety, Depression and improved Quality of life among Pulmonary Arterial Hypertensive patients. while in control group had significant increased in Anxiety, Depression and impaired Quality of life among Pulmonary Arterial Hypertensive patients.